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## Development and Implementation of a Clinical Pharmacology, Therapeutics and Prescribing Strand for Newcastle University's MBBS Degree Programme Using the British Pharmacological Society's Core Curriculum for Medical Students

**Background and aims:** It is imperative that undergraduate medical courses adequately prepare students for safe prescribing as a core component of a junior doctors' work. An under-preparedness for prescribing in practice is indicated by high medication error rates in the NHS<sup>1</sup>. We undertook a wholesale review of the Clinical Pharmacology and Therapeutics curriculum within the MBBS degree programme at Newcastle University, with the aim of identifying any areas where content, teaching and integration of the subject could be strengthened.

**Summary of work:** We reviewed the literature of best practice for therapeutic curriculum design. The British Pharmacological Society (BPS) proposed a detailed core curriculum, in line with overarching GMC outcomes, for CPT teaching in UK medical schools<sup>2</sup>. We used the learning outcomes from this BPS core curriculum together with learning outcomes from our own curriculum to design a 'Clinical Pharmacology, Therapeutics and Prescribing' (CPTP) strand. CPTP runs throughout the MBBS programme and the associated guide details where in the 5 years and in which specific unit or rotation each outcome is covered (See Figure 1)

Knowledge Outcome				
Category	Stages 1 & 2 Taught in CPTP 1-3	Stage 3	Stage 4 Taught in CPTP 4	Stage 5
Medicines management	<b>Formularies</b> <ul style="list-style-type: none"> <li>List the important resources contained within the British National Formulary &amp; equivalents</li> </ul>	<ul style="list-style-type: none"> <li>Be able to use the BNF or Children's BNF to support Medicines management</li> </ul>	<ul style="list-style-type: none"> <li>Explain the relationship between the British National Formulary (&amp; equivalents) &amp; local formularies</li> </ul>	<ul style="list-style-type: none"> <li>Identify the important issues relating to coordination of prescribing in primary and secondary care</li> </ul>

**Figure 1: An excerpt from the strand guide. Colours indicate rotations where outcomes are covered**

**Outcomes:** We launched the CPTP strand at the start of the 2014-15 academic year. Key developments included introduction of pharmaceutical numeracy outcomes across all 5 years and the movement of skill-based prescribing outcomes into the first two years. We strengthened links with pharmacists, engaging more pharmacy tutors in teaching and increasing interprofessional education sessions with pharmacy students. CPTP units of study run throughout years 1, 2 and 4 and end of unit evaluation revealed overall satisfaction ratings of 90-97%.

**Discussion and conclusion:** One difficulty that arises within a complex five year curriculum taught across many different settings (e.g. within the medical school, in clinical rotations), is ensuring that all tutors hold a coherent knowledge of where all elements of a particular strand are taught; knowledge necessary to focus teaching appropriately, prevent duplication and ensure complete coverage of the curriculum. Mapping of the CPTP outcomes to specific units of study and clinical rotations has aided in the planning and delivery of teaching to provide a seamless education throughout the years. Staff and students are ensured that they are covering all the CPTP material that best prepares students for the PSA and future clinical practice. This strand provides a model example of the implementation of a core stream running through a curriculum.

### References:

1. Doran et. al., 2009. EQUIP study. <http://www.gmc-uk.org/about/research/25056.asp>.
2. Ross and Maxwell, 2012. Br J Clin Pharmacol. 74(4): 644-661.